ABSTRACT

The present invention provides HIV-derived lentivectors which are safe, highly efficient, and very potent for expressing transgenes for human gene therapy, especially, in human hematopoietic progenitor cells as well as in all other blood cell derivatives. The lentiviral vectors comprise a self-inactivating configuration for biosaftey and promoters such as the EF1α promoter as one example. Additional promoters are also described. The vectors can also comprise additional transcription enhancing elements such as the wood chuck hepatitis virus post-transcriptional regulatory element. These vectors therefore provide useful tools for genetic treatments such as inherited and acquired lympho-hematological disorders, gene-therapies for cancers especially the hematological cancers, as well as for the study of hematopoiesis *via* lentivector-mediated modification of human HSCs.